

Note on the Nebula near Merope. By Prof. W. Tempel.

(Extract from a letter to the Foreign Secretary, communicated by
Lord Lindsay.)

The English scientific papers, as also the *Monthly Notices*, have recently directed some attention to the nebula in the neighbourhood of *Merope*, and it is but natural that I should be much interested in anything written or observed in reference to this nebula, which I was the first to discover, on October 19, 1859, when in Venice (*Astr. Nachr.*, No. 1290).

This nebula has already, so to say, a history; for by some its existence has been thoroughly recognised, whilst by others my assertion of it has been contradicted (*Astr. Nachr.*, No. 1393, p. 13).

Amongst the former are to be found various illustrious astronomers, such as Schmidt, Winnecke, Anwers, Schönfeld, &c., who, with instruments of comparatively small size, have attested to the existence of the nebula to the south of *Merope*, and described its form exactly as I saw it from the beginning, and have always continued to see it.

Prof. Schönfeld says in his catalogue, Part II., p. 80: "Anwers 18 = G. Cat. 768. Tempel's nebula near *Merope* very distinct, and immediately conspicuous, even without more accurate indications of its position. Anwers' notices (74) as to its extension and form very correct."

On the other side were ranged astronomers not less distinguished, like D'Arrest, Padre A. Secchi, and the observers at Parsonstown, who failed to see the nebula with their great telescope, and consequently doubted its existence.

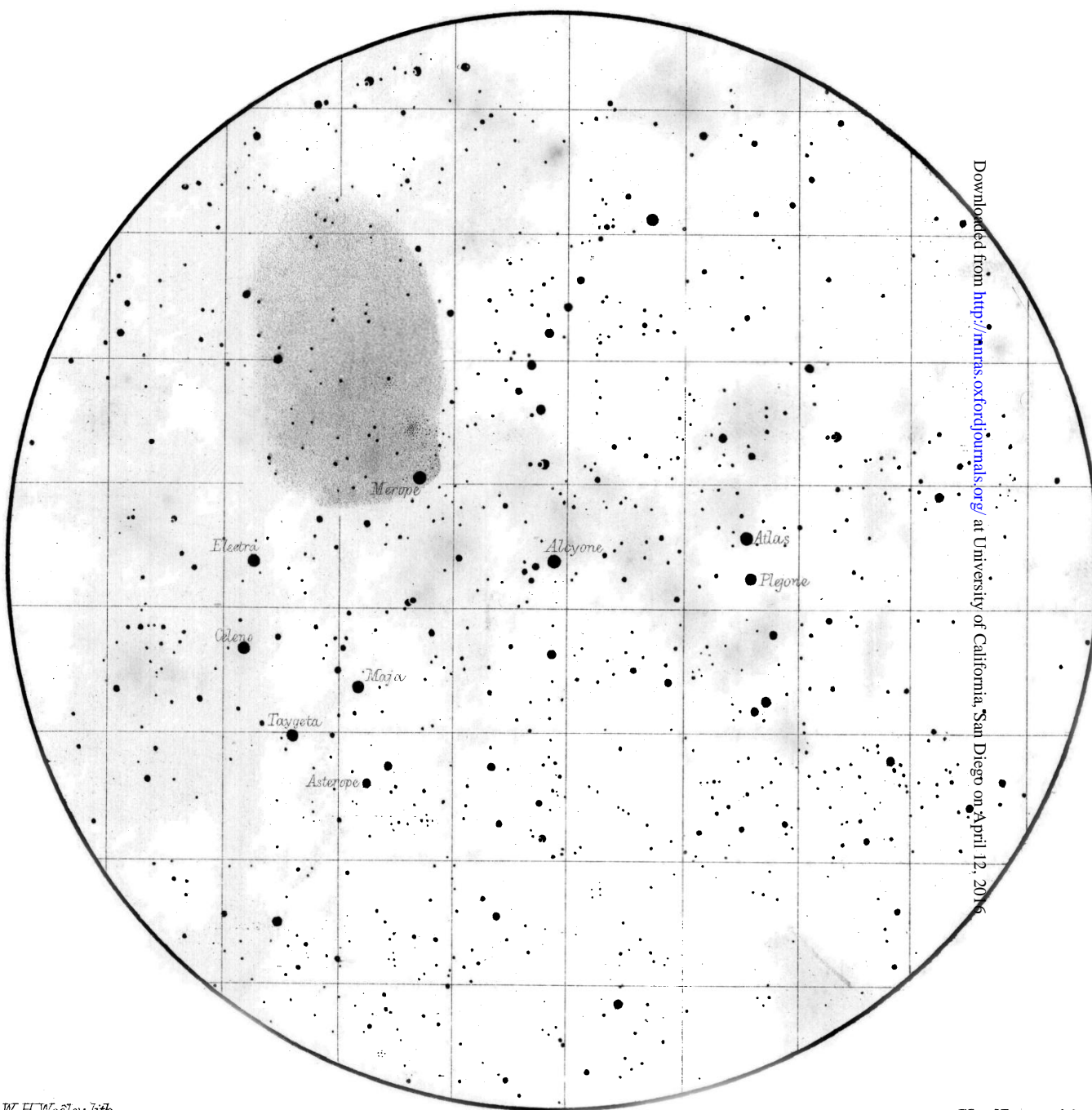
But all ambiguity has been since cleared up, for on fitting the large telescopes with eye-pieces of a low magnifying power the nebula becomes distinctly visible, and is shown by them with an image equal in clearness to that given by the smaller instruments.

This fact is no more than is logically to be expected: that what was to be seen with a small telescope should be at least equally visible with a large one. Indeed, any discrepancy ought rather to be the other way, since a small instrument cannot be expected to show all the detail revealed by one of larger size.

It is now ascertained beyond question that the nebula exists. It has been observed with the great Washington Refractor (*Inst. of the Observatory*, p. 45), and again with the Reflector of Lord Rosse (*Observatory*, vol. i., p. 370); and anyone publishing statements as to its non-existence merely uses vain words, and proclaims himself wanting in knowledge of the history of nebulae and of the management of telescopes.

The description written by Goldschmidt in the year 1864 seems to show that a certain amount of nebulosity surrounds the entire group of the *Pleiades*; but this is an optical illusion, and

The Pleiades, with the nebula near Merope.



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in another letter I shall, with your permission, proceed to prove this by the description of a false image in the telescope, a curious phenomenon hitherto unexplained.

My present sketch is, in its main features, the same as that published at Milan (*Pubb. dell' Oss. R. di Brera*, No. 5), only that all the minute stars and the exact form of the nebula have been added here with my *Amici No. I.*, with a magnifying power of 113.

To the right near *Merope* the nebula is so sharply defined that its curvature is clearly traceable, whilst its remaining outline is pale and indistinct. I could only succeed in distinguishing two nuclei, or nodules, and they but little more luminous than the rest.

A glance at the sketch is sufficient to show that in various parts many of the stars are omitted, which, for want of time and owing to pressure of other work, I have as yet been unable to put in. These may amount to some hundreds; indeed, even in the portions which seem thick with stars, many remain to be added, because the scale of the drawing is too small.

Being unable to foresee when it will be in my power to complete a more accurate work, I send this sketch, which is sufficiently so to compare with the drawings of others.

The circle shows the diameter of the field of view of my *Steinheil*, with an eye-piece of 24.

Comparing my drawing with that of Mr. Maxwell Hall, the two will be found to agree perfectly. That of Mr. Common, on the other hand, has evidently been executed with a telescope of insufficient power to show the *Merope* nebula. This will be obvious to anyone who examines the portions where Mr. Common has drawn three nebulous masses, where minute stars are shown in my sketch; invisible in his telescope as separate points of light, they must have appeared as nebulosity.

My sketch shows such a number of double stars that I have not hitherto been able to find them all in the catalogues, and it is worthy of note that the magnifying power is lower than that ordinarily used in the observation of double stars, showing that *Amici No. I.* gives images so clearly defined as to separate closely-united stars, even when they were not specially looked for, or previously known by me to be thus divisible.

*Royal Observatory in Arcetri,
Florence, 1880, May 22.*

Observations of Comet I. 1880, made at the Royal Observatory, Cape of Good Hope. By David Gill, Her Majesty's Astronomer at the Cape.

The following are the results of observations of Comet I. 1880, made here during the period of the visibility of the Comet. It is a matter of much regret that observations of the nucleus